

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently Amended) A method for managing a data imaging service in a
2 distributed computer system having a host computer system with at least one
3 storage device connected to the host computer system by driver software, the
4 method comprising:
 - 5 (a) inserting an interface layer between the driver software and the storage
6 device, the interface layer exporting a platform dependent API and
7 controlling data passing between the driver software and the storage
8 device;
 - 9 (b) running, in the host system computer, a CIM object manager containing a
10 CIM provider that can make calls on the interface-layer platform
11 dependent API;
 - 12 (c) running, in a management server, management facade software including
13 a CIM client that can contact the CIM provider to control the CIM provider;
 - 14 (d) running, in the management server, a federated bean that generates
15 method calls to the management facade software to control the interface
16 layer; and
 - 17 (e) controlling the federated bean to designate master volumes, shadow
18 volumes and bitmap volumes and to transfer data between specified
19 master and shadow volumes.
- 1 2. (Original) The method of claim 1 wherein step (e) comprises controlling the
2 federated bean with a graphical user interface.

- 1 3. (Currently Amended) The method of claim 2 wherein step (e) further comprises
2 placing the graphical user interface in a location other than the host system
3 computer and the management server.
- 1 4. (Original) The method of claim 3 wherein step (e) further comprises using a
2 lookup service in the distributed computer system to locate the federated bean
3 and obtain a proxy thereto.
- 1 5. (Currently Amended) The method of claim 4 wherein step (e) further comprises
2 using the ~~federated bean~~ proxy in the graphic user interface to control the
3 federated bean.
- 1 6. (Original) The method of claim 1 wherein step (e) comprises:
2 (e1) creating a volume set;
3 (e2) designating a master volume, a shadow volume and a bitmap volume as
4 part of the volume set; and
5 (e3) performing data imaging operations on the volume set.
- 1 7. (Original) The method of claim 6 wherein a plurality of volume sets are created
2 and wherein the method further comprises:
3 (f) creating a set group;
4 (g) adding selected volume sets to the set group; and
5 (h) controlling the set group with a single command to perform data imaging
6 operations on each set in the set group.
- 1 8. (Original) The method of claim 6 further comprising attaching an overflow volume
2 to the volume set.

1 9. (Currently Amended) The method of claim 6 wherein the computer system has a
2 first host computer with a volume set thereon and a second host computer and
3 the method comprises exporting a shadow volume in the volume set from the first
4 host computer.

1 10. (Currently Amended) The method of claim 9 further comprising importing the
2 shadow volume exported by the first host computer into the second host
3 computer.

1 11. (Original) The method of claim 1 wherein step (b) comprises using the CIM object
2 manager to instantiate a CIM provider object based on a managed object file.

1 12. (Original) The method of claim 11 wherein step (c) comprises using a
2 management facade factory to create a management facade object when a CIM
3 provider object is instantiated.

1 13. (Currently Amended) Apparatus for managing a data imaging service in a
2 distributed computer system having a host computer system with at least one
3 storage device connected to the host computer system by driver software, the
4 apparatus comprising:

5 an interface layer located between the driver software and the storage
6 device, the interface layer exporting a platform dependent API and controlling
7 data passing between the driver software and the storage device;

8 a CIM object manager running in the host ~~system~~ computer, the CIM
9 object manager containing a CIM provider that can make calls on the interface
10 layer platform dependent API;

11 management facade software running in a management server, the
12 management facade software including a CIM client that can contact the CIM
13 provider to control the CIM provider;

14 a federated bean running in the management server, the federated bean
15 generating method calls to the management facade software to control the
16 interface layer; and
17 means for controlling the federated bean to designate master volumes,
18 shadow volumes and bitmap volumes and to transfer data between specified
19 master and shadow volumes.

1 14. (Original) The apparatus of claim 13 wherein the means for controlling the
2 federated bean comprises a graphical user interface.

1 15. (Original) The apparatus of claim 14 wherein the distributed computer system
2 includes a network and wherein the means for controlling the federated bean
3 further comprises means for connecting the graphical user interface to the
4 federated bean over the network.

1 16. (Original) The apparatus of claim 15 wherein the distributed computer system
2 comprises a lookup service and wherein the means for controlling the federated
3 bean comprises means for using the lookup service to locate the federated bean
4 and obtain a proxy thereto.

1 17. (Currently Amended) The apparatus of claim 16 wherein the means for
2 controlling the federated bean comprises means for using the ~~federated bean~~
3 proxy to control the federated bean.

1 18. (Original) The apparatus of claim 13 wherein the means for controlling the
2 federated bean comprises:
3 means for creating a volume set;
4 means for designating a master volume, a shadow volume and a bitmap
5 volume as part of the volume set; and
6 means for performing data imaging operations on the volume set.

- 1 19. (Original) The apparatus of claim 18 wherein a plurality of volume sets are
2 created and wherein the apparatus further comprises:
3 means for creating a set group;
4 means for adding selected volume sets to the set group; and
5 means for controlling the set group with a single command to perform data
6 imaging operations on each set in the set group.
- 1 20. (Original) The apparatus of claim 18 further comprising means for attaching an
2 overflow volume to the volume set.
- 1 21. (Currently Amended) The apparatus of claim 18 wherein the computer system
2 has a first host computer with a volume set thereon and a second host computer
3 and the apparatus comprises means for exporting a shadow volume in the
4 volume set from the first host computer.
- 1 22. (Currently Amended) The apparatus of claim 21 further comprising means for
2 importing the shadow volume exported by the first host computer into the second
3 host computer.
- 1 23. (Original) The apparatus of claim 13 wherein the CIM object manager comprises
2 means for instantiating a CIM provider object based on a managed object file.
- 1 24. (Original) The apparatus of claim 23 further comprising a management facade
2 factory that creates a management facade object when a CIM provider object is
3 instantiated.
- 1 25. (Currently Amended) A computer program product for managing a data imaging
2 service in a distributed computer system having a host computer ~~system~~ with at
3 least one storage device connected to the host computer ~~system~~ by driver

4 software, the computer program product comprising a computer usable medium
5 having computer readable program code thereon, including:

6 interface layer software inserted between the driver software and the
7 storage device, the interface layer software exporting a platform dependent API
8 and controlling data passing between the driver software and the storage device;

9 CIM object manager software operable in the host computer system
10 containing means for creating a CIM provider that can make calls on the interface
11 layer platform dependent API;

12 management facade software operable in a management server including
13 a CIM client that can contact the CIM provider to control the CIM provider;

14 federated bean software operable in the management server, the
15 federated bean software generating method calls to the management facade
16 software to control the interface layer; and

17 program code for controlling the federated bean to designate master
18 volumes, shadow volumes and bitmap volumes and to transfer data between
19 specified master and shadow volumes.

1 26. (Original) The computer program product of claim 25 wherein the program code
2 for controlling the federated bean comprises graphical user interface program
3 code.

1 27. (Original) The computer program product of claim 26 wherein the program code
2 for controlling the federated bean further comprises program code for using a
3 lookup service in the distributed computer system to locate the federated bean
4 and obtain a proxy thereto.

1 28. (Currently Amended) The computer program product of claim 27 wherein the
2 program code for controlling the federated bean further comprises program code
3 for using the ~~federated bean~~ proxy in the graphic user interface to control the
4 federated bean.

29. (Currently Amended) A computer data signal embodied in a carrier wave readable medium that includes software instructions for managing a data imaging service in a distributed computer system having a host computer system with at least one storage device connected to the computer system by driver software, the computer data signal software instructions comprising:

interface layer software for insertion between the driver software and the storage device, the interface layer software exporting a platform dependent API and controlling data passing between the driver software and the storage device;

CIM object manager software operable in the host computer system containing means for creating a CIM provider that can make calls on the interface layer platform dependent API;

management facade software operable in a management server including a CIM client that can contact the CIM provider to control the CIM provider;

federated bean software operable in the management server, the federated bean software generating method calls to the management facade software to control the interface layer; and

program code for controlling the federated bean to designate master volumes, shadow volumes and bitmap volumes and to transfer data between specified master and shadow volumes.